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(58) Field of search

A5R

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(54) Improvements in and relating
to sanitary clothing

(57) A sanitary article such as a
nappy, absorbent pad or under-
pants is impregnated or coated or
has applied thereto a backing ele-
ment which is itself impregnated or
otherwise treated with one or more
active materials which change co-
lour in the presence of certain sub-
stances in the waste products (ur-
ine, faeces, perspiration etc.). Ex-
amples given are sodium nitroprus-
side for detecting ketonic bodies in
urine, and Helianthine (methyl
orange) for detecting alkalinity or
acidity in urine.

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SPECIFICATION

Improvements in and relating to sanitary clothing

5 **Field of invention**

This invention relates to the sanitary articles of clothing which expression is intended to include nappies, sanitary absorbent pads, underpants and other articles which may come into contact with human body secretions and/or organic waste liquids. In particular the invention relates to the incorporation into a sanitary article of a means to indicate the presence of certain chemicals or substances in the human secretions which come into contact therewith.

Background to the invention

20 In the diagnostic study of disease, the chemical analysis of the organic waste materials from the patient, and particularly the patients' urine, is known to be important. The analysis is even more important in the case of 25 newborn children, to allow an early diagnosis of certain diseases, or to detect changes in the growth (progress) of the child, or for a regular survey of their clinical condition.

30 The invention

According to the present invention a sanitary article at least part of which will come into contact with human waste products (such as urine, faeces, perspiration and the like) 35 includes at least one active material which will react with one or more of the said waste products and produce a definite colour change in the presence thereof. Discovery of such a colour change in the sanitary article will immediately alert the doctor or nurse or mother or other attendant to the fact that the said substance is present in the patient's waste products and that a pathological condition may therefore exist in the patient requiring 40 treatment.

The active material may be in the form of powder, dispersed on and/or inside the sanitary article, in which case a suitable bonding agent is provided to fix the powder in place. 50 Alternatively the active material may be in liquid form, in which case it may be applied by spraying or soaking the article or a limited strip or zone of the article with or in the liquid.

55 Two or more active materials may be applied to the sanitary article so as to give an indication of the presence of more than one substance in the human waste, and references to an active material will be taken to include a mixture of such materials.

60 The active material may further additionally or instead be homogenized into a low melting point material such as wax or a low melting point plastics material, which is then applied 65 for example by spraying from heated spray

nozzles, onto the sanitary article. Additionally a material containing a homogenized active material may be fluidised by means of a suitable solvent, and subsequently applied to 70 the sanitary article as a liquid.

Where the active material is in the form of a liquid or paste or jelly it can be smeared onto the sanitary article.

It is also possible to soak an absorbing

75 backing material such as paper or fabric or the like, with the active material, and thereafter fix the backing material to the sanitary article for example as a label by sticking or sewing.

80 Alternatively the absorbent backing material which is impregnated with the active material may be in the form of a continuous strip or cord conveniently wound on a bobbin or the like, and introduced onto or into the sanitary 85 article for example by weaving into the cloth from which the article is formed.

By a suitable selection of the active material or materials it is possible to obtain an early indication for example of the presence of

90 albumen or ketones or blood in the urine. Likewise it is possible to have an early indication about the pH of the urine (acidic or alkaline).

95 By using a mixture of indicator active materials, it is possible to obtain simultaneously a plurality of such indications.

The active materials may be any chemical substances which undergo a stable colour change whenever in contact with certain substances which will be present in the waste matter of a patient suffering from a particular pathological condition. Such materials are known per se and do not therefore form part 100 of the present invention.

105 By way of example, the following materials may be used: Nitroprusside for detecting the presence of ketonic bodies in urine; and Heli-anthine (methyl orange) for detecting the presence of alkalinity or acidity in urine.

110 It goes without saying that materials will be selected which, under the conditions and at the concentrations of use, are fully harmless to the patient and which will not produce secondary effects such as irritation of the skin.

115 It is of course to be understood that the present invention is not limited to the embodiments referred to above, which are given only by way of example.

120 CLAIMS

1. A sanitary article at least part of which will come into contact with human waste products (as herein defined) includes, at least in the part thereof which will so come into

125 contact with the said waste products, at least one active material which will react with one or more of the said waste products and produce a definite colour change in the presence thereof.

130 2. A sanitary article as claimed in claim 1

in which the active material is applied directly to the sanitary article by soaking the article in a liquid solution of the active material.

3. A sanitary article as claimed in claim 1
- 5 in which the active material is in the form of a paste or jelly and is smeared onto the article.
4. A sanitary article as claimed in claim 1 in which the active material is in the form of a liquid and is sprayed onto the article.
- 10 5. A sanitary article as claimed in claim 1 in which the active material is applied to a backing support element which is woven into or stuck or sewn onto the article like a label.
6. Sanitary article according to claim 5 in
15 which the said backing support element is in the form of a strip of paper or fabric or cord.

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